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WHY ANNUAL PERCENTAGE RATES ASSOCIATED WITH FRACTIONAL PREMIUMS SHOULD BE DISCLOSED AND SOME EASY WAYS TO PERFORM THE CALCULATIONS

Fractional (or modal) premium charges are the additional charges assessed when policyholders pay premiums semiannually, quarterly, or monthly instead of annually. Since 1973, when the first edition of my consumer's handbook was published, I have been suggesting that the charges be disclosed to policyholders as annual percentage rates (APRs). This article explains why it is important for the APRs to be disclosed, and describes some easy ways for consumers and their advisers to perform the calculations.

Reasons for APR Disclosure

There are four reasons for APR disclosure of fractional premium charges. First, APRs are needed to judge the desirability of paying premiums annually. For example, if the APR for monthly premiums greatly exceeds the APR on a loan, the policyholder would save a substantial amount by borrowing to pay the annual premium and repaying the loan in monthly installments during the year. Suppose the annual premium is \$3,000 and the monthly premium is \$285; the APR for monthly premiums would be 29.7 percent. Suppose further the policyholder could borrow at an APR of 10 percent. Borrowing to pay the annual premium and repaying the loan at the rate of \$285 per month would generate in a year savings of \$294—slightly more than one monthly premium—so that only 11 monthly payments would have to be made.

Second, wide variations exist among companies. In 1998, I conducted a survey to ascertain the APRs for

two policy sizes and the various premium payment frequencies. The APRs ranged from 0 to 54 percent. Of the 104 companies surveyed, 75 companies had one or more APRs in excess of 15 percent, and 28 companies had one or more APRs in excess of 20 percent. (See our December 1998 issue.)

Third, wide variations exist within companies. In the survey mentioned above, the APRs for many of the companies varied widely among the premium payment frequencies. More recently, I learned of a company whose APR for monthly premiums is 9.5 percent and whose APR for quarterly premiums is 49.2 percent. (See our July 2003 issue.)

Fourth, the APR calculation is difficult, and the consumer may be deceived. The problem stems from the fact that dividing the fractional premium charges in a year by the annual premium is wrong and greatly understates the APR. The calculation is wrong because the policyholder does not have the use of the entire annual premium for the entire year. At the beginning of the year, the policyholder pays the first fractional premium instead of the annual premium. Thereafter, as additional fractional premiums are paid during the year, the policyholder has the use of a smaller and smaller amount. As for the magnitude of the understatement, APRs for semiannual premiums are more than four times the wrong percentages, for quarterly premiums almost three times the wrong percentages, and for monthly premiums more than two times the wrong percentages.

A Family of Three Formulas

As mentioned, the APR calculation is difficult. In 1978, in an effort to ease the process, I constructed a family of three formulas—one each for semiannual, quarterly, and monthly premiums—with which to calculate the APRs. Here are the formulas:

Semiannual: $APR = \frac{2(2S - A)}{A - S}$

Quarterly: $APR = \frac{12(4Q - A)}{5A - 2Q}$

Monthly: $APR = \frac{36(12M - A)}{13A + 42M}$

where APR is the annual percentage rate expressed as a decimal, A is the annual premium, S is the semi-annual premium, Q is the quarterly premium, and M is the monthly premium. Using the earlier example where the annual premium is \$3,000 and the monthly premium is \$285, inserting those figures into the monthly premium formula shows that the APR is 29.7 percent. The results are not precise, but the formulas produce close approximations of the APR. The derivation of the formulas and thorough explanations of them may be found in our December 1998 issue.

A Table of Ratios

In 1999, in a further effort to ease the process, I constructed a table of ratios with which to calculate the APRs. The table is in the box at the right.

Consider the same example. Dividing the \$285 monthly premium by the \$3,000 annual premium produces a ratio (quotient) of 0.0950. Looking up that ratio in the monthly section of the table shows the APR is 29.7 percent. When the exact ratio is not in the table, approximate the APR by interpolation. The table was constructed using iteration, where the APR is determined through repetitive trials.

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ANNUAL PERCENTAGE RATES ASSOCIATED WITH FRACTIONAL PREMIUM RATIOS

Semiannual		Quarterly		Monthly	
Ratio	APR (%)	Ratio	APR (%)	Ratio	APR (%)
0.500	0.0	0.250	0.0	0.08333	0.0
0.502	1.6	0.252	2.1	0.0835	0.4
0.504	3.2	0.254	4.3	0.0840	1.7
0.506	4.9	0.256	6.4	0.0845	3.0
0.508	6.5	0.258	8.6	0.0850	4.3
0.510	8.2	0.260	10.7	0.0855	5.6
0.512	9.8	0.262	12.9	0.0860	6.9
0.514	11.5	0.264	15.0	0.0865	8.2
0.516	13.2	0.266	17.2	0.0870	9.5
0.518	14.9	0.268	19.4	0.0875	10.8
0.520	16.7	0.270	21.5	0.0880	12.1
0.522	18.4	0.272	23.7	0.0885	13.4
0.524	20.2	0.274	25.9	0.0890	14.6
0.526	21.9	0.276	28.1	0.0895	15.9
0.528	23.7	0.278	30.3	0.0900	17.2
0.530	25.5	0.280	32.5	0.0905	18.4
0.532	27.4	0.282	34.7	0.0910	19.7
0.534	29.2	0.284	36.9	0.0915	21.0
0.536	31.0	0.286	39.1	0.0920	22.2
0.538	32.9	0.288	41.3	0.0925	23.5
0.540	34.8	0.290	43.6	0.0930	24.7
0.542	36.7	0.292	45.8	0.0935	26.0
0.544	38.6	0.294	48.0	0.0940	27.2
0.546	40.5	0.296	50.3	0.0945	28.5
0.548	42.5	0.298	52.5	0.0950	29.7
0.550	44.4	0.300	54.8	0.0955	31.0
0.552	46.4	0.302	57.1	0.0960	32.2
0.554	48.4	0.304	59.3	0.0965	33.4
0.556	50.5	0.306	61.6	0.0970	34.7
0.558	52.5	0.308	63.9	0.0975	35.9
0.560	54.5	0.310	66.2	0.0980	37.1
0.562	56.6	0.312	68.5	0.0985	38.4
0.564	58.7	0.314	70.8	0.0990	39.6
0.566	60.8	0.316	73.1	0.0995	40.8
0.568	63.0	0.318	75.4	0.1000	42.0
				0.1005	43.3
				0.1010	44.5
				0.1015	45.7
				0.1020	46.9
				0.1025	48.1
				0.1030	49.3
				0.1035	50.5
				0.1040	51.7
				0.1045	52.9
				0.1050	54.1
				0.1055	55.3
				0.1060	56.5
				0.1065	57.7
				0.1070	58.9
				0.1075	60.1
				0.1080	61.3

How to use this table: Divide the fractional premium by the annual premium. Look up the ratio in this table. Read the annual percentage rate (APR) to the right of the ratio. For example, suppose the quarterly premium is \$304.20 and the annual premium is \$1,170. The ratio is 0.260. The APR is 10.7%. If the ratio is not in the table, interpolate to obtain the APR. For example, suppose the semiannual premium is \$597.87 and the annual premium is \$1,170. The ratio is 0.511, which is halfway between 0.510 and 0.512. The APR is 9.0%, which is halfway between 8.2% and 9.8%.

Our APR Calculator

In 2003, in yet another effort to ease the process, I posted an easy-to-use APR calculator on our website (www.theinsuranceforum.com). Click “calculators” on the home page and proceed. The calculator shows not only APRs but also dollar amounts of fractional premium charges.

Dollar amounts of fractional premium charges are easily calculated by subtracting the annual premium from the sum of the fractional premiums paid in a year. Our calculator shows dollar amounts for the user’s convenience. Sometimes dollar amounts are helpful. For example, a small administrative fee for fractional premiums in a small policy may be insignificant in dollars but seem large in APR terms. Also, showing dollar amounts is analogous to truth-in-lending requirements that lenders disclose not only APRs but also dollar amounts of finance charges.

Here is an illustration of how our calculator works. Suppose the annual, semiannual, quarterly, and monthly premiums are \$3,000, \$1,560, \$810, and \$285, respectively. When keying them in, show only dollars and cents; do not key in commas or dollar signs. Here are the APRs and dollar amounts of the fractional premium charges that are paid in a year:

Frequency	APR	Charges
Annual	—	—
Semiannual	16.7%	\$120
Quarterly	21.5%	\$240
Monthly	29.7%	\$420

Other APR Calculators

At least seven other APR calculators are available on the internet. Some were posted voluntarily by companies who felt their policyholders should have access to the information. Others were posted in connection with settlements of lawsuits. The calculators are described in the subsections below.

Northwestern Mutual’s Calculator

In 2001, The Northwestern Mutual Life Insurance Company (Milwaukee, WI) took an important and pioneering step by posting an APR calculator on an internal website available to the company’s representatives. The calculator shows APRs but not dollar amounts of fractional premium charges. In our November 2001 issue, I commended the company for taking the action. In the same article, however, I expressed disappointment that the calculator was not available directly to policyholders.

In 2003, Northwestern took another important step by posting an APR calculator on the company’s public website. Click “Learning Center” on the company’s home page (www.nmfn.com), click “Calculators,” and click “APR Calculator.” The calculator shows APRs but not dollar amounts of fractional premium charges.

Northwestern’s public calculator has a “cap” and therefore is of limited usefulness to policyholders of other companies. The calculator generates an error message when the user keys in a combination of an annual premium and a fractional premium for which the APR is 20 percent or above.

In July 2004, in response to my inquiry, a company spokesman explained the cap. The calculator is intended for Northwestern policyholders, and all the company’s APRs are significantly below 20 percent. Also, the company is concerned that consumers might use the calculator incorrectly and thereby obtain false results; a calculator without a cap remains available to company representatives on an internal website.

I commend Northwestern for its leadership role in this area, but the cap is regrettable. It is important for calculators to be available and usable widely. I think it is paternalistic to impose a cap because of the possibility of improper use of a simple calculator.

Metropolitan Life’s Calculator

In 2004, Metropolitan Life Insurance Company (New York, NY) posted an APR calculator on the company’s website. The company is to be commended for taking the action. Click “Life Insurance” on the company’s home page (www.metlife.com), and click “Modal Premium APR Calculator.” The calculator shows APRs but not dollar amounts of fractional premium charges.

United Heritage’s Calculator

In 2003, United Heritage Life Insurance Company (Meridian, ID) posted an APR calculator on the company’s website. The company is to be commended for taking the action. On the company’s home page (unitedheritage.com), click “Life Insurance,” click “Individual Life Insurance,” and click “APR Calculator.” The calculator shows APRs but not dollar amounts of fractional premium charges.

The United Heritage calculator cannot be used by policyholders of other companies. The user must key in one and only one premium—the annual, semiannual, quarterly, or monthly premium. The figures that promptly appear are the United Heritage premiums for the other three frequencies and the APRs associated with United Heritage’s semiannual, quarterly, and monthly premiums.

In July 2004, I suggested to Dennis L. Johnson, president and chief executive officer of United Heritage, that the calculator be modified to make it usable by policyholders of other companies. He declined to follow the suggestion. He said the calculator in its current form is more useful to a policyholder of the company because only one premium needs to be keyed in, and a general calculator requires a policyholder to know and key in at least two premiums. However, he offered and I agreed to have his company provide a link to our calculator.

The Attorneys' Calculator

Beginning late in 1998, several lawsuits have been filed relating to the lack of APR disclosure of fractional premium charges. The attorneys for the plaintiffs in one of the lawsuits posted an APR calculator on their website (www.modalpremiumlitigation.com). On the home page, click "APR Calculator." The calculator shows APRs but not dollar amounts of fractional premium charges.

Massachusetts Mutual's Calculator

Massachusetts Mutual Life Insurance Company (Springfield, MA) was the defendant in one of the lawsuits. In connection with the settlement, the company posted an APR calculator on the company's website. On the home page (www.massmutual.com), under "For Individuals," click "Insure." Then, under "Premium Payment Information," click "modal charge disclosure and annual percentage rate calculator." The calculator shows not only APRs but also dollar amounts of fractional premium charges.

First Colony's Calculator

First Colony Life Insurance Company (Lynchburg, VA) was the defendant in one of the lawsuits. In connection with the settlement, the company posted an APR calculator on a special website. On the home page (www.fcliclassaction.com), click "APR Calculator." The calculator shows APRs but not dollar amounts of fractional premium charges.

North American's Calculator

North American Company for Life and Health Insurance (Chicago, IL) was the defendant in one of

the lawsuits. In connection with the settlement, the company posted an APR calculator on the company's website. On the home page (www.nacolah.com), click "Premium Frequency and APR Information." The calculator shows APRs but not dollar amounts of fractional premium charges.

Conclusion

Fractional premium charges should be disclosed to policyholders and prospective policyholders as APRs. It is difficult to calculate an APR by hand. Moreover, when a person tries to calculate the APR by hand, the result of the attempt is likely to be a substantial understatement of the APR and the policyholder as a consequence is likely to be deceived.

Today, the availability of simple formulas, look-up tables, and easy-to-use calculators simplifies the process. In the future, more companies—those that impose reasonable fractional premium charges and consequently have no incentive to conceal the magnitude of the charges—may post calculators on their websites. The primary challenge is to make policyholders and those individuals who provide advice to policyholders aware of the importance of the information and the easy availability of the information.

Editor's Disclosure Note

As mentioned in this article, there have been several lawsuits relating to the lack of APR disclosure of fractional premium charges. I served as an expert witness for the plaintiffs in a few of the cases. Normally I do not engage in expert witness work, but I made an exception in this instance. I am no longer involved in the cases.